

KAP – ANNUAL SCIENTIFIC CONFERENCE
– ELDORET 14TH – 17TH MARCH 2007 –
SIRIKWA HOTEL

CASE PRESENTATION
SHOULDER PAIN AS A RHEUMATIC
MANIFESTATION OF DIABETES MELLITUS (2) –
“FROZEN SHOULDER”

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ABSTRACT

- Shoulder pain, a common musculoskeletal symptom, aetiologically is related to periarticular lesions mainly subacromial impingement (SAI) (90% adults). Articular lesions e.g. Synovitis adhesive capsulitis (frozen shoulder) etc may be referred to the neck and humeral deltoid insertion. Referred pain from the cervical or thoracic spine, thoracic outlet or subdiaphragmatic structures may manifest at the shoulder. Diabetes mellitus syndrome may be complicated by adhesive capsulitis more frequently than in the general population.
- A case is presented of a 52yr old house wife of high social standing, who has been followed up for 5yrs. Initially left shoulder pain but in the last 2yrs predominantly right shoulder pain, less involvement of the neck, right wrist and right foot. She has been under several clinicians with a frustration long list of probable diagnoses to her ailment.
- Diabetes mellitus was diagnosed in September 2005 and attacks related to hyperglycaemia/metabolic decompensation. The last attack was in January 2007 which necessitated hospitalization. A visiting rheumatologist confirmed 'FROZEN SHOULDER' with diabetes mellitus.
- A multidisciplinary and multifactorial intervention aimed at multiple risk factors of diabetes syndrome is the way forward.
- Patient education/nutrition counseling and physiotherapy is the cornerstone of effective management.



- M (Mrs) – African (non caucasian)
- DOB – 1955, Present age 51
- Parity – 8, youngest 16yrs
- Post menopausal – 2yrs
- HRT – ml (?Progynora April 06
“menopausal symptoms” – stopped)
- Family history – High BP, both parents with diabetes mellitus
- Social history – married to a diplomat/businessman, no alcohol/smoking, stressors + (social responsibility)



- Under our care for 5yrs
- First seen 10/12/02
- 3 admissions – Aga Khan Hospital
Mombasa, first 13/9/05 – 17/9/05,
second 20/3/06 – 25/3/06, third
24/1/07 – 29/1/07
- Last view 5/2/07
- Gaps in follow up.
 - 3yrs -30/12/02 up to 7/2/05
 - 7 months – 26/6/06 up to 24/1/07



Relevant past medical history

Initial complaints

- Pain in the epigastric/back.
Clinically/radiologically, duodenal ulcer (2002) – relief with PPI (Losec) + Pyloxin kit. Relapses frequent
- Joint pains – left sided shoulder/elbow joints.
Later both shoulder joints/back.
- Various diagnoses – Trensosynoritis, acute arthritis and referred to surgeon (Feb 05). ? Infiltration
- NSAIDS administered repeatedly. ? Contributed to relapses of PUD! Some relief obtained for rheumatic complaints but again relapsed.



First admission: Sept 2005

Summary/salient points

- Left shoulder/scapular pains 3 – 4 months
- Weight loss 81kgs to 71kgs
- Loss of appetite
- Poor sleep - Family stressors ++
- Epigastric pains – PUD exacerbation
- Family H/O diabetes mellitus noted



Work up

- FBC (N). ESR 40mm (16.9)
- Connective tissue screen – Rh/SLE/ANF = NEG
- X rays: cervical spine/shoulder joints – normal
- abd/pelvic U/S – normal
- Thyroid profile – normal
- Lipid profile – high total cholesterol (6.42)/triglycerides 2.7
- Renal/hepatic profiles – normal
- Random blood sugar – 22-8mmols
- Echo – left ventricular diastolic dysfunction stiff LV wall EF 76.7%,
- MSN – sugar ++microalbinuria +
- ECG – 56%/sinnus rhythm (otherwise normal)
- HBAC 13.2%
- (Normotensive) reading glasses



Clinical impression

- Newly diagnosed diabetes mellitus (2)
- Polyarthralgia/with ? Frozen (L) shoulder
- Stress reaction
- Others – peptic ulcer disease, L.V diastolic dysfunction, post menopausal, hyperlipidaemia/microalbuminuria
- Stabilised and discharged in satisfactory general condition
- Discharge drugs
 - Humilin 70/30 , Insulin 20 i.u with BF, 10i.u with supper
 - Glucophage tabs 500mgs BD
 - E/C Asa Tab daily
 - Crestor 10mgs nocte
 - Mobic 7.5 mgs daily
 - Tritace 2.5mgs OD
 - Astymin forte cap BD
 - Losec 20mgs BD
 - (2 weeks duration)



Second admission – Mar 06

Basic problems

- Exacerbation (L) shoulder pain/elbow
- Hyperglycaemia (Had been titrated to OHA)
- Exacerbation PUD – insulin reconstituted – Humalog MX 25, antirheumatic/PUD medications



Third admission Jan 07

- Had been to USA – full evaluation done (? No report – WT – 71kgs, HT 1.67, BMI 25.5 (overweight), swimming, HBGM+
- Intraarticular infiltration of right shoulder done (“Hyperglycaemia)
- Complaints
 - Right shoulder pain
 - Stiffness of right shoulder joint with restriction of movement
 - Hyperglycaemia – FBS 7.1, RBS upto to 11.0mmol, HBAC 8.4%
 - Other joints affected – Big toes, fingers DJJ and interscapular regions/neck – serum uric acid/arylase – normal
 - Hyperlipidamia – T/cholesterol 5.95%
 - Poor sleep



Consultation

- With visiting professor of rheumatology, meticulous evaluation
- Impression – Right shoulder soft tissue pain – frozen shoulder and radiating to jaw and neck
- Recommendation – Add Gabapenritin (Titrated dose), physiotherapy (CT), diabetic control – counselling improved



Discharged on

- Tabs Glyfor 500mgs BD
- Tabs Glubenclamide 5mgs BD
- Gabapentin 100mgs TDS 1/7, 300mgs BD day 2, 300mgs TDS day 3 1/52
- Variace 2.5 mgs OD 1/12
- Crestor 10mgs nocte 1/12
- Trinerve 1 OD 1/12
- Somraz 40mgs OD 2/52
- Gariscon 10mls 1 DS 2/52
- Ocfen SR TB 75mgs BD 2/52
- Physiotherapy
- Patient education
- Home based glucose monitoring
- Exercises (swimming)
- 5/2/07 – was in good glycaemic control, better sleep and improved range of shoulder movement. Joint pain administered remarkably.



INTRODUCTION

SHOULDER PAIN

- From the most mobile joint of the body
- Common and not a diagnoses!

Commonest causes of shoulder pain

- Periantricular lesions (Sub acronial impingement)
 - Rotator cuff tendonitis/tears (90%) (over 40 years)
 - Calcific tendomitis
 - Bicipital tendomitis
 - Subacronial bursitis
- Articular lesions – synovitis (G.H, A.C), osteoarthritis (GH, AC), adhesive capsulitis (“Frozen shoulder”)
- Thoracic conditions – (Referred) – A.C.S (Acute Coronary Syndrome), pulmonary embolism, gall bladder disease, subphrenic abscesses, medastinal tomours
- Bone tumours/Pagets disease
- Systemic/diffuse conditions – P.M.R – Polymyalgia, rheumatic, myosilis (connective tissue disorder osteoarthrosis)



Incidence/prevalence ??

- Pancity of information, locally
- UK – 1% adults over 45 yrs experience a new episode of shoulder pain (R.C.G.P census/survey 1980-81)
- Prevalence (? 4-20%) – (Shoulder pain – middle age - Clin. Orthop. Bergnurd et al 1988)
- One survey rheumatology clinic based 134 – 65% - Rotator cuff, 11% pericapsular musculature, 10% A/C joint arthritis, 3% GH joint arthritis, 5% referred from the neck – Vecchio et al – shoulder pain in community based rheumatology clinic – British journal of rheumatology 34 – 1995)
- One survey adults (40 – 70 yrs) – Frozen shoulder 2% - Frozen shoulder ACT orthop scand 1969 supplement 119 Lundberg B

AFRICA

- Soft tissue rheumatic lesions/HIV in Zambia
– Rotator cuff : 30% (Njobu/McGill Aflar - 2007 NBI)
- Profile of rheumatic disease among Africans/Indians – Durban (SA) KE Hoopto – frozen shoulder observed, ? Referral bias Prof. G. M. Mody (Afla 2007 NBI)
- Tropical rheumatology – soft tissue disorders pose a familiar management difficulty – Prof. McGill – Aflar 2007 NBI)

Risk factors for frozen shoulder

- Female – sex
- Age > 40yrs
- Shoulder trauma
- Surgery
- Diabetes mellitus
- Thyroid disease
- Hemiplegia
- Cardio respiratory disorders

(Frozen shoulder – Lundberg/Nash – Acta orthop scand 1969:113, clin rheumatology 1989:3 551 – 566)



Definition – ‘adhesive capsulitis’

- Thickening of capsule with adhesions to underlying humerus restricting range of movement
- May follow – Bursitis/tendonitis at shoulder, prolonged immobilisation, restriction to both active./passive movement especially end of movement. Shows ‘deep persistent pain’ with stiffness. Notable to lie on that side
- Phasic – painful phase, adhesive ‘frozen’ phase, resolution phase, overlap with phases, long term limitations – 15%



Rheumatic/Endocrine disorders

■ Aetiology – metabolic disturbances, autoimmune pathophysiology

■ Diabetes – soft tissue disorders - ? Polyarthralgia, Dupuytren's contracture, carpal tunnel syndrome (15%), adhesive capsulitis

■ Others

- DISH – Diffuse Idiopathic Skeletal Hyperostosis
- Hypomobility/stiffness (excessive hydration with sugar, alcohols)
- Scleroderma like (Stiffness)
- Joint hypomobility
- Muscle weakness
- Calcification: (20% - diabetes especially at shoulder)
- Amyotrophy (rare)
- Neuropathic arthritis
- Osteolysis/osteomyelitis
- Muscle infarction
- Insulin resistance – auto immune e.g. polyarthralgia

Diagnostic work up – shoulder pain

- Overriding – methodical rheumatological evaluation
- History – pain: time onset, site, variations with posture/movement e.g Rotator cuff/cuff. “Arc”, intermittent frozen shoulder – persistent with restriction of movement especially ends.
- Examination – visual, tenderness, movement.
- Imaging – radiography – special views (e.g. supraspinatus outlet), ultra sound – “rotator cuff” tears, MRI, arthroscopy/± CT, bone scintigraphy.
- Local anaesthesia/intraarticular infiltration
- Joint aspiration
- Electrophysiological
- CK myositis
- Connective tissue/endocrine screen (other basis)
- Underlying factor – diabetes mellitus – glycemic control, risk factors, adherence

MANAGEMENT

■ Adhesive capsulitis/diabetes

■ Aims

- Reduce pain – analgesia/physiotherapy
- Improve range of movement/function, physiotherapy
- Minimal adverse effects
- Diabetes management
- Intraarticular steroid and short course corticosteroid (oral 2 weeks) – (Differed – aggravating glycemic control from previous experience)

■ Arthroscopy – intraarticular local anaesthesia, non absorbable corticosteroid – reduces severity of symptoms, improving range of movement

MANAGEMENT

- T.N.S (Transcutaneous Nervous Stimulation)
 - high intensity improves pain relief especially if combined at distension arthrography.
- E.C.S.W.T – Effective for calcific tendonitis
- Surgery - ? Forced manipulation
- R.C.T. – Likely to be beneficial
- Hydrodistension and intraarticular corticosteroid injection
- Extra corporeal shock wave therapy (calcifying tendonitis)



MANAGEMENT

OTHERS – interventions (? Effectiveness)

- Analgesics (paracetamol/opiater)
- NSAIDS (oral)
- Topical NSAIDS
- Intraarticular NSAIDS
- Sub acronial corticosteroid injections
- Intraarticular cortcosteroid injections
- Oral corticosteroids
- Physiotherapy – exercises/manual therapies
- Laser
- Electromagnetic fields
- Ice
- Inraarticular guaneth done
- Transdermal glycerol trinitrate
- Phonophoresis (topic medication + ultra sound)
- Surgery
- ??? Ultrasound
- (Ref cathy speed e all – shoulder pain – clinical evidence June 2000 3rd issue BMJ publication)

Diabetes management

- Cornerstone – diabetes education /M.N.T, self management
- (Type 2 diabetes – clinical practice guidelines sub Saharan Africa- IDF region)
- Recommendations for glycemic control – Capillary fasting mmol/l – optimal 4.6, 2hr post prandial (Lunch) – optimal 4.8
- Lipid and blood pressure control – systolic < 130, diastolic < 80, microalbuminuria – persistent on dipstick, systolic <120, diastolic < 70
- Key tests exams – Regularly – comprehensive foot exam (yearly), microalbumin, BP regular, BMI/waist circumference – stat/regular visits, ECG yearly (3 -6 monthly)

Diabetes management

- Issues of particular note in case presented
 - delayed diagnosis (50 – 85% Africa!),
 - lifestyle – “diplomat”. (Multifactorial
 - intervention – Peter Gaede et al. Steno 2
 - study – NEJM Jan 30 2003)

Conclusion

- Diabetes mellitus is on an exponential increase in the developing world and early diagnosis must be improved on.
- Along with musculo skeletal disorder a major burden on individual health and social care is realized – hence the UN/WHO endorsed the bone and joint decade.
- An initial step is to raise awareness at all levels of importance to recognize that they can be effectively prevented and treated (Prof. A. D. Woolf – keynote address AFLAR NBI 2007)
- The way forward is the multidisciplinary/multifactorial approach and establishing rheumatology clinics (Dr. Oyoo – AFLAR 2007)




Some references

- Oxford hand book of rheumatology – Alanharnn, Gavin Clunie
- ABC Rheumatology – Michael Snath – BMJ
- Internal medicine – Stein
- Clinical rheumatology – AFLAR 5th conference (18th – 22nd Feb 07: NBI)
- Clinical evidence – 31st June 2000 – Fiona Godlee
- TYPE 2 DIABETES – clinical practice guidelines for Sub Saharan Africa – IDF African region
- SEMDSA – guidelines for type 2 diabetes at primary care in 2003
- Medical management of type 2 diabetes A.D.A.
- The New England Journal of Medicine – Multifactorial/intervention and cardiovascular disease in patient with type 2 diabetes – Galder et all







Acknowledgements

Mentors

-  Dr. J. B. O. Okanga
-  Dr. E. Ambeva – Orthopaedic surgeon
-  Prof. Kamran

Staff

-  Aga Khan University
-  Sr. Rebecca/Sr. Asirigwa
-  Bomu clinic
-  Sr. Judy – Dr. J. B. O. Okanga & Associates

Pharmaceutical companies – Boehringer Ingelheim, Eli Lilly, Norvo Nordisk, Sun. P, IDF Africa region

Secretarial

-  Lilly – KMA Coast
-  Esther – Dr. J. B. O. Okanga & Associates



Asanta sana

Many thanks

